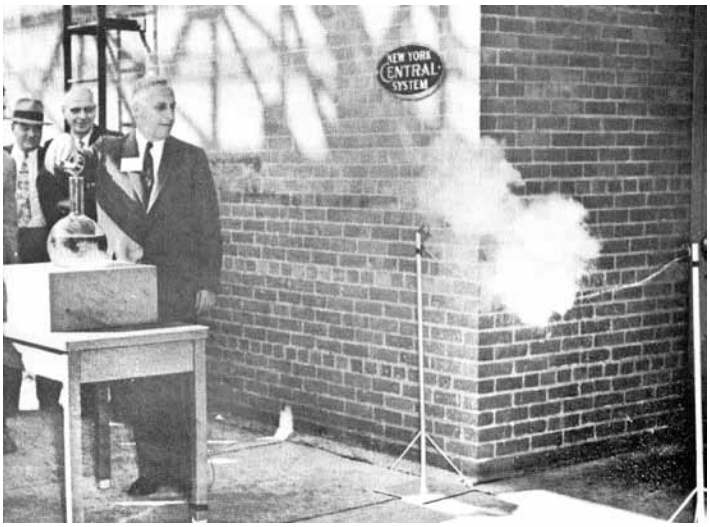
The Atomic Switch Lamp

On May 15, 1957, New York Central Railroad President Alfred E. Perlman stood outside of a modern brick building in Cleveland, Ohio, with a beaker of liquid in his hand. Pouring the contents into a large flask, he started a chemical reaction that exposed a solar cell, which in turn ignited a long strip of magnesium that had been stretched across the building's entrance. With this "ribbon cutting" ceremony, the railroad's new Cleveland Technical Center was formally dedicated.

Bringing the New York Central's research programs into one central location, scientists and engineers at the center worked to adapt developments in modern technology to railroad applications. From synthetic cross ties and hardened frogs, to novel freight car designs and prototype snow jets, many new ideas were developed by the Central's research staff. The results of their work ranged from the practical to the experimental. Even uses for nuclear energy were explored by the railroad, which installed an electronic neutron generator at the center, to create its own radioactive materials. One of the more interesting applications of this technology was an "atomic" switch lamp, introduced in 1957.

From the outside, the atomic switch lamp appeared similar to a kerosene or electric model. However, its light source was a glass bulb, coated with light-emitting phosphors. The bulb



New York Central President Alfred E. Perlman performs the "ribbon cutting" at the new Cleveland Technical Center. Note the NYCS oval logo mounted near the entrance.

was filled with radioactive Krypton gas (not to be confused with Superman's Kryptonite), which excited the phosphors and caused them to glow. With the reaction completely contained within the bulb, there was no need for additional fuel, or any type of power source. The bulb was expected to last for twelve years, at which time it would be recharged with fresh Krypton 85 isotope. Other radioactive materials, such as Tritium, were also considered as an energy source, but it does not appear that they were put into actual use.

Not to be upstaged by its rival, the Pennsylvania Railroad soon developed a similar lamp. An article in the September 1959 issue of *Popular Science* magazine reported that the

The New York Central's "atomic" switch lamp contained radioactive Krypton gas and luminescent phosphors.

Pennsy was testing an "atomic light" with a zinc sulphide phosphor coating that gave off glowing beta particles when exposed to radioactive Krypton. The switch lamp, placed into service in Altoona, Pa., was expected to last ten years without requiring any maintenance.

Following press coverage in 1957, the New York Central's version of the switch lamp was again highlighted in a 1963 brochure about the technical center. After that, it seems to have disappeared from public view. The lamp may have proved too costly to maintain, failed to live up to expectations, or became impractical due to the increased regulation of radioactive substances. Whatever the reason, the "atomic" switch lamp was evidently never put into regular service.

It is unknown if any of the prototype lamps survived. If you ever find a switch lamp with a glass bulb, but no source of electricity, you may have stumbled across one of these relics of nuclear energy's early years. You may want to check it with a Geiger counter before putting it on display, though!

References:

New York Central System. *Man, Mind & Material*. New York: New York Central Railroad, 1963.

Popular Mechanics. "Atomic Lamp Burns Twelve Years," October, 1957, p. 316.

Popular Science. "Atomic Light," September, 1959, p.107.